CLAIMS

What is claimed is:

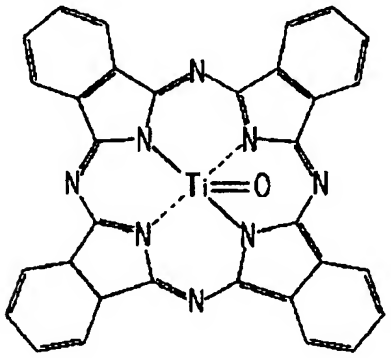
1. A single-layered electrophotographic photoreceptor comprising:

a charge generating material;

a binder resin; and

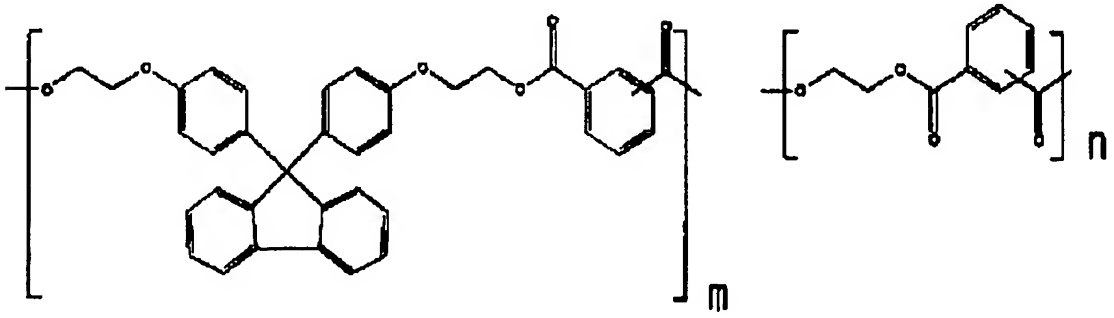
a charge transfer material on a substrate:

wherein the charge generating material is titanyloxy phthalocyanine which has a following formula:



and the titanyloxy phthalocyanine is a crystal form which has at least 2 main peaks in a range of (2θ+-0.2)=9.5° to 27.3° of a Bragg angle in a characteristic CuKα X-ray diffraction spectrum; and

the binder resin is a polyethylene terephthalate polymer which has a following formula:

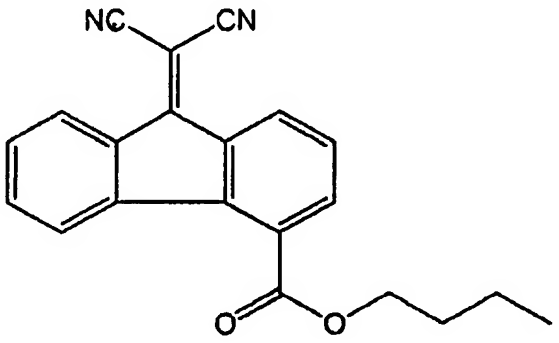


with n and m each being an integer that is equal to, or greater than, 1.

2. The single-layered electrophotographic photoreceptor according to claim 1, wherein the charge transfer material comprises a positive hole transfer material and an electron transfer material.

3. The single-layered electrophotographic photoreceptor according to claim 2, wherein the positive hole transfer material is an enaminstylbene polymer.

4. The single-layered electrophotographic photoreceptor according to claim 2, wherein the electron transfer material is 9-dicyanometylene-9H-fluorene-4-carboxylic butyl ester which has a following formula:



5. The single-layered electrophotographic photoreceptor according to claim 1, wherein the charge generating material is included in a dispersion liquid, the dispersion liquid including the charge transfer material, 1,1,2-trichlroethane as a solvent, and polycarbonate as another binder resin.

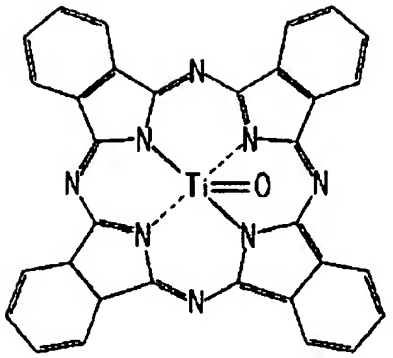
6. The single-layered electrophotographic photoreceptor according to claim 5, wherein the polycarbonate is in a range of 10 wt% to 90 wt%.

7. The single-layered electrophotographic photoreceptor according to claim 5, wherein the dispersion liquid is milled at a temperature below 15°C.

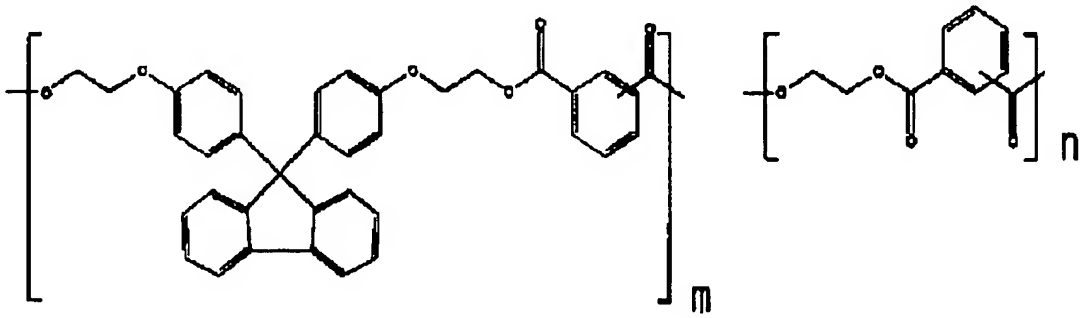
8. The single-layered electrophotographic photoreceptor according to claim 1, wherein the binder resin further includes polycarbonate and is a mixture of polycarbonate and polyethylene therephthalate polymer in a ratio of 1:99 to 99:1 by weight .

9. A method of manufacturing a single-layered electrophotographic photoreceptor comprising:

dispersing, with a binder resin and a predetermined solvent, a charge generating material, wherein the charge generating material comprises titanyloxy phthalocyanine which has a following formula:



and the titanyloxy phthalocyanine is a crystal form which has at least 2 main peaks in a range of (2θ+-0.2)=9.5° to 27.3° of a Bragg angle in a characteristic CuKα X-ray diffraction spectrum; and the binder resin is a polyethylene terephthalate polymer which has a following formula:



with n and m each being an integer that is equal to, or greater than, 1;

straining out dispersing materials to obtain a dispersion liquid;

dissolving, in a predetermined solvent, a charge transfer material comprising a positive hole transfer material, an electron transfer material and a binder resin to obtain a dissolved charge transfer material;

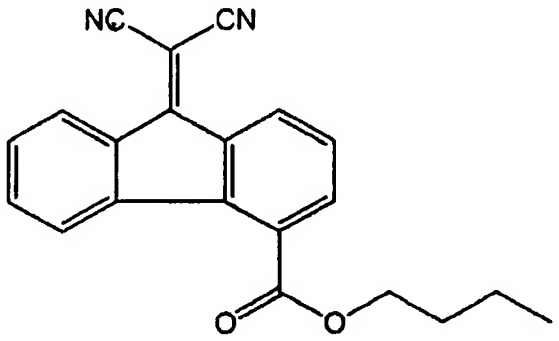
mixing the dispersion liquid with the dissolved charge transfer material to form a coating liquid; and

coating the coating liquid onto a substrate of a drum or cartridge to form a single-layered electrophotographic photoreceptor.

10. The method of claim 9 wherein the charge transfer material comprises a positive hole transfer material and an electron transfer material.

11. The method of claim 10, wherein the positive hole transfer material is an enaminstylbene polymer.

12. The method of claim 10, wherein the electron transfer material is 9-dicyanometylene-9H-fluorene-4-carboxylic butyl ester which has a following formula:



13. The method of claim 9, wherein the charge generating material is included in the dispersion liquid, the dispersion liquid including the charge transfer material, 1,1,2-trichlroethane as a solvent, and polycarbonate as another binder resin.

14. The method of claim 13, wherein the polycarbonate is in a range of 10 wt% to 90 wt%.

15. The method of claim 9, wherein the dispersion liquid is milled at a temperature below 15°C.

16. The method of claim 9, wherein the binder resin further includes polycarbonate and is a mixture of polycarbonate and polyethylene therephthalate polymer in a ratio of 1:99 to 99:1 by weight.

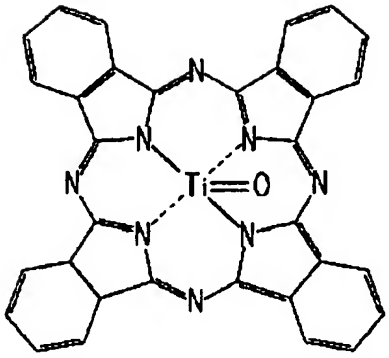
17. A single-layered electrophotographic photoreceptor in a photoreceptor cartridge of an image forming apparatus, the single-layered electrophotographic photoreceptor comprising:

a charge generating material;

a binder resin; and

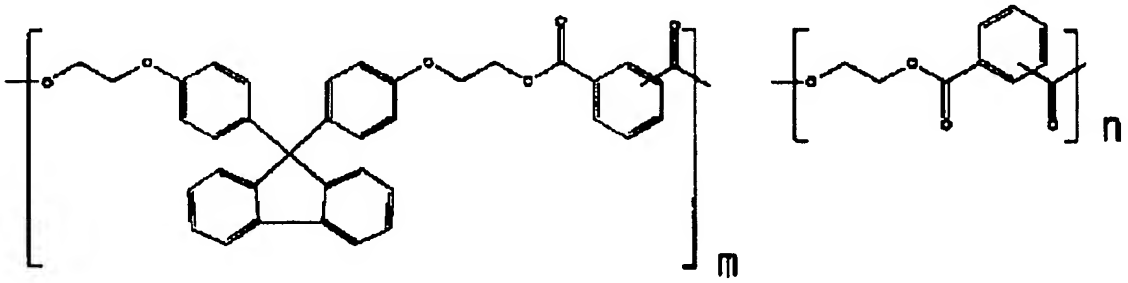
a charge transfer material on a substrate,

wherein the charge generating material is titanyloxy phthalocyanine which has a following formula



and the titanyloxy phthalocyanine is a crystal form which has at least 2 main peaks in a range of (2θ+-0.2)=9.5° to 27.3° of a Bragg angle in a characteristic CuKα X-ray diffraction spectrum; and

the binder resin is a polyethylene terephthalate polymer which has a following formula;



with n and m each being an integer that is equal to, or greater than, 1.

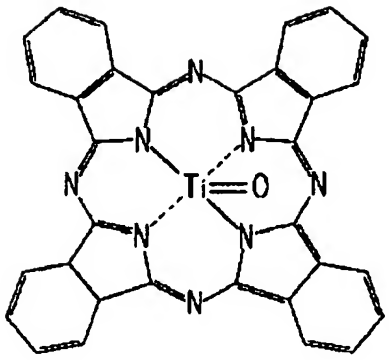
18. The single-layered electrophotographic photoreceptor of claim 17, wherein the charge transfer material comprises a positive hole transfer material and an electron transfer material.

19. A single-layered electrophotographic photoreceptor installed in a photoreceptor drum of an image forming apparatus, the single-layered electrophotographic photoreceptor comprising:

a charge generating material a binder resin; and

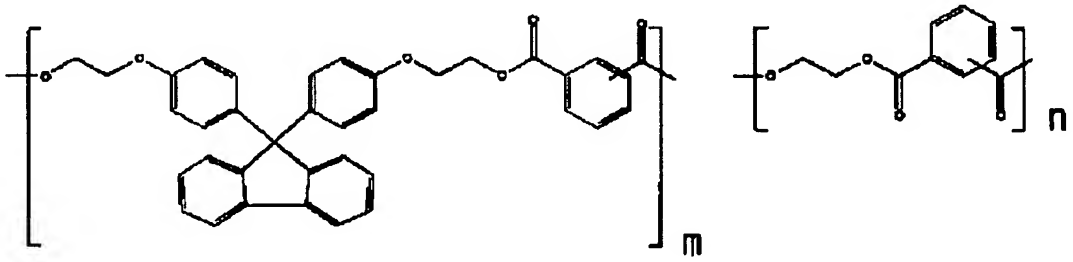
a charge transfer material on a substrate:

wherein the charge generating material is titanyloxy phthalocyanine which has a following formula:



and the titanyloxy phthalocyanine is a crystal form which has at least 2 main peaks in a range of (2θ+-0.2)=9.5° to 27.3° of a Bragg angle in a characteristic CuKα X-ray diffraction spectrum; and

the binder resin is a polyethylene terephthalate polymer which has a following formula:



with n and m each being an integer that is equal to, or greater than, 1.

20. The single-layered electrophotographic photoreceptor of claim 19, wherein the charge transfer material comprises a positive hole transfer material and an electron transfer material.